Open University and Animal Experiments in

Research in 2001

THERE were substantial delays to the release of the 2001 report due to the Animal Ethical Committee's request for several changes.

The general covering statement for Research and Graduate Teaching in 2001 includes the following: *"The number and species of animals used varies from year to year, depending on the investigations* (experiments) *performed and the number of researchers involved. All experimental animals are killed at the end of the experiment."*

The second sentence represents a change from the statement used from at least 1991-2000, which included the phrase "*with or without killing them at the end of the experimental period*." The change suggests that the previously-used wording was inaccurate. Another claim, made in 2000, that "*no vivisection is carried out at the OU*" has been dropped, apparently as a result of pressure from SES. Our lawyer deems this claim an example of 'semantic sophistry'.

Under principal researcher Professor Steven Rose, chicks were trained on a passive avoidance task or a bead-floor visual discrimination task. This involves them pecking at a bitter bead or at chick crumbs on the cage floor. Various substances were injected into their brains and the effects of these on their performance noted. (After 'training' in 1994, chicks were given electric shocks to cause amnesia. It is not clear whether or not these procedures were followed in 2001 as the amount and type of detail in the report to the Animal Ethical Committee varies from year to year.) 300 chicks were being used **per week** by Rose's team in 1991, since when figures have been withheld. However, Rose admitted in a BBC radio priogramme that in 2002 that the figure is 10,000 a year.

The chicks are killed by decapitation and their brains are examined for biochemical changes resulting from the 'training'. Rose has abandoned the implication, included since 1997, that his work has relevance to '*deep philosophical questions of the relationship between mind and brain and the question of consciousness*' and '*understanding of the prevention and treatment of ... diseases such as Alzheimer's*'.

He has dropped another claim, also included since 1997, that studies of mechanisms in chick brains point directly to how memory loss occurs in human dementia. This has been replaced with "*although the impetus for the work over many years has been that of basic science, work over the past couple of years has increasingly turned to exploiting our findings to explore potential treatments for memory loss in Alzheimer's disease*". However, a report (Langley *et al*., 2000) from a workshop including the OU's own Dean of Science Dr Stephen Swithenby states:

> *"the precision of animal studies may be superfluous if the results are not directly transferable to humans"*

and

> *"human studies of disease evolution ... particularly with dementia ... are revealing the limitations of some traditional animal methods".*

Clinical, epidemiological and *in vitro* studies, scanning of the brains of human volunteers, and post-mortem work are the preferred methods of many scientists studying dementia in humans. Please contact Vivien Pomfrey for details of bequeathing your body/brain for humane research.

Professor Rose and colleagues published 5 articles based on the research described above in 2001.

Professor Mike Stewart heads other teams researching cellular mechanisms of learning and memory, this time using rats. One of Stewart's experiments, the results of which were published in 2000, involved immobilising 6 anaesthetised rats in stereotaxic holders in recording chambers, drilling holes in their skulls and stimulating parts of their brains with electrodes.

From 1998 to 2000 Professor Mike Stewart was also involved in US-based experiments on mice 'modified' to possess a human gene which is involved in Alzheimer's. There is no mention of this project in the 2001 report.

The claim made in 1999-2000 for Stewart's work that it "*provides additional insights into the cellular mechanisms of neural plasticity in rats and mice*" has been replaced with "*the overall goal of this research is to provide…*" (Note – mice are still mentioned here.)

Stewart's report states that "*following stimulation of nerve tissue, there is a marked alteration in neural circuitry in the key region of the brain involved in learning, the hippocampus.*" As the normal learning process involves natural electrical stimulation of learning-related brain regions, all this seems to prove is that we can simulate this, and the implications are unclear. In any case, rodents have far superior regenerative capabilities to humans. Furthermore, even in primates, particular brain functions do not always occur in the same part of the brain as in humans, and animal experiments have consequently produced misleading, even useless, results. The 2000 report by Langley *et al*., referred to above, describes scanning techniques which can be used to study the effect of Alzheimer's on human neurons.

The third project, conducted under principal researcher Dr Caroline Pond, relates to the relationships between adipose tissue (fat) and the immune system. In one experiment, guinea pigs bred at the OU were fed on different diets for a number of weeks, injected in the leg daily for 4 days, and then killed. The injections induce a full immune response in a lymph node. Rats were given similar treatments before being killed. There is no mention in 2001 of the mouse experiments detailed in 1999 and 2000, so presumably these have ceased.

Pond's third experiment used bought-in guinea pigs, which were fed on various diets, injected in both hind legs 3 times a week for 2 weeks, to simulate HIV-like chronic, low-level immune activation, and then killed. Their cells were then tested with human HIV drugs.

Pond's report claims that her experiments are relevant to HIV-associated fat redistribution syndrome, whilst conceding that this was a completely unexpected side-effect of anti-viral drugs – which, of course, had been tested on non-human animals!

4 primary journal articles, 4 review articles and one book or popular article, based on the above experiments, are listed in the 2001 report.

Pond's animal experiments on adipose tissue have been ongoing since at least 1982. Her work used 70 rats, 60 guinea pigs and 50 dwarf hamsters in 1991, since when figures have been withheld.

REFERENCE

Langley, G., Harding, G., Hawkins, P., Jones, A., Newman, C., Swithenby, S., Thompson, D., Tofts, P. and Walsh, V. (2000) Volunteer Studies Replacing Animal Experiments in Brain Research, *ATLA* **vol.28**, pp. 315-31

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